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NATIONAL COMMUNICABLE DISEASE CENTER

Morbidity and Mortality

Vol. 16, No. 24

WEEKLY REPORT

Week Ending June 17, 1967

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

PUBLIC HEALTH SERVICE

BUREAU OF DISEASE PREVENTION AND ENVIRONMENTAL CONTROL

EPIDEMIOLOGIC NOTES AND REPORTS
TYPE E BOTULISM – Chicago, Illinois

Three cases (one fatal) of foodborne intoxication caused by *Clostridium botulinum* type E in homemade gefilte fish prepared from fresh whitefish were reported in Chicago in the week ending June 17, 1967.

On Saturday, June 10, at about 2:00 p.m., a 57-year-old housewife served herself and a 30-year-old man lunch consisting of gefilte fish with horseradish on toast and a bottled soft drink. The woman consumed two portions of gefilte fish; the man ate one portion. An hour later the housewife's pregnant daughter-in-law consumed two glasses of milk and a half portion of the gefilte fish without horseradish. About 6 hours after lunch, the housewife felt nauseated, complained of heartburn, and vomited several times. The vomiting resumed Sunday morning, 8 hours later, accompanied by weakness, dizziness, dry mouth, abdominal distention, and constipation. She also had noticeable hoarseness and slurred speech, but no diplopia. Sunday evening, after becoming dyspneic and hypotensive (BP 80, 60), she was admitted to a private hospital. On Monday

(Continued on page 194)

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CONTENTS

Epidemiologic Notes and Reports
Type E Botulism – Chicago, Illinois 193
Tuberculosis – Buffalo, New York 195
Rubella – Floyd County, Georgia 195

CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES
(Cumulative totals include revised and delayed reports through previous weeks)

DISEASE	24th WEEK ENDED		MEDIAN	CUMULATIVE, FIRST 24 WEEKS		
	JUNE 17, 1967	JUNE 18, 1966	1962 - 1966	1967	1966	MEDIAN 1962 - 1966
Aseptic meningitis	45	41	38	792	676	659
Brucellosis	6	–	7	111	95	158
Diphtheria	1	2	4	49	72	129
Encephalitis, primary:						
Arthropod-borne & unspecified	27	28	- - -	599	588	- - -
Encephalitis, post-infectious	21	13	- - -	417	414	- - -
Hepatitis, serum	43	33	646	920	600	20,273
Hepatitis, infectious	742	594		18,459	15,914	
Malaria	41	5	2	911	133	42
Measles (rubeola)	1,239	4,472	12,224	53,038	172,735	319,225
Meningococcal infections, total	34	61	48	1,346	2,230	1,505
Civilian	33	56	- - -	1,248	1,978	- - -
Military	1	5	- - -	98	252	- - -
Poliomyelitis, total	–	2	2	10	12	36
Paralytic	–	2	2	9	11	29
Rubella (German measles)	1,805	1,350	- - -	34,718	37,110	- - -
Streptococcal sore throat & scarlet fever	6,295	6,777	6,142	265,699	252,957	234,840
Tetanus	8	8	8	80	66	98
Tularemia	3	4	8	65	68	109
Typhoid fever	4	6	9	176	133	162
Typhus, tick-borne (Rky. Mt. spotted fever)	10	14	10	66	55	49
Rabies in animals	97	94	70	2,154	2,091	2,088

NOTIFIABLE DISEASES OF LOW FREQUENCY

	Cum.		Cum
Anthrax	2	Rabies in man	–
Botulism	–	Rubella, Congenital Syndrome	3
Leptospirosis	17	Trichinosis	37
Plague	–	Typhus, murine: Tex.-1	17
Psittacosis	20	Polio, Unsp.	1

TYPE E BOTULISM – Chicago, Illinois

(Continued from front page)

the patient continued to have difficulty with breathing and hypotension, but she remained mentally alert. Tuesday morning she had a cardiac arrest and was resuscitated, but afterwards was unresponsive and required mechanical respiration. The patient remained in a deep coma and died Thursday morning, June 15.

The man also had vomiting, abdominal distention, constipation, and hoarseness beginning 22 hours after he had eaten the fish and persisting for 2 days. He was admitted to Cook County Hospital on Monday, June 12. A diagnosis of intestinal obstruction was first considered; however, the diagnosis of botulism was made shortly after admission. He was treated with nasogastric suction and intravenous fluids with prompt response.

The pregnant daughter-in-law had a dizzy spell late Saturday afternoon and another dizzy spell with vomiting Sunday afternoon. This was followed by several hours of nausea, weakness, and a slight distortion of hearing. She recovered spontaneously. The fetus remained viable.

The diagnosis of the first case presented difficulties because of the predominance of vomiting, which was related to a previous history of hiatal hernia, and the knowledge that this symptom is not commonly associated with the classical form of botulism. When the second case was recognized as botulism, the diagnosis of the first case became evident.

Botulinum antiserum for types A and B (Lederle) was administered to the first patient on Wednesday after she had been in coma for more than 24 hours. The outbreak was reported to NCDC on Wednesday afternoon, and type E antiserum was promptly dispatched from Atlanta and administered on Wednesday evening, 9 hours before the patient died. The second and third patients were recovering by the time the diagnosis of botulism was made. Antiserum was not given.

An extract of the gefilte fish prepared with a buffered gelatin solution inoculated intraperitoneally into mice with appropriate antibotulinum sera and controls revealed type E botulinum toxin. Titrations of the amount of toxin are in process.

Serum samples taken from the first patient on the first, second, and third day of illness were inoculated into mice according to the same procedure. All mice except those receiving heat-treated extract or extract with type F antiserum developed typical signs of botulism and died within 24 hours. Sera from the other two patients obtained 5 days after the gefilte-fish lunch had equivocal activity. Some of the mice that were not protected with type E antiserum showed suggestive signs of botulism but most recovered.

The gefilte fish had been made by the housewife from a fresh "Lake Superior" whitefish (actually caught in Lake Michigan or Lake Erie) purchased at a local supermarket on or about April 20. The entire fish was ground to a fine paste, blended with fresh eggs and onions, shaped into patties the size of a hamburger bun, and simmered in water in an open pot for 4 hours. Part of this "cooked" mixture was put in a sterilized jar, which was capped and refrigerated immediately. It remained unopened in the refrigerator (temperature 44°F – ascertained later) for 7 weeks, until June 10, when the gefilte fish was served cold. The other portion of gefilte fish was kept in an open dish in the refrigerator and consumed without ill effects within a few days of its preparation.

(Reported by Dr. Samuel Andelman, Commissioner of Health, Chicago Board of Health; Dr. Norman Rose, State Epidemiologist, Illinois Dept. of Public Health; Dr. Frederick Stenn, Wesley Memorial Hospital, Chicago; Dr. Roger Benson, Cook County Hospital, Chicago; the Laboratory Program, NCDC; and an EIS Officer.)

Editorial Note: A recent survey (1) of fresh fish caught in Lakes Michigan, Superior, Huron, and Erie has shown that 1 to 9 percent of fish in each lake and 59 percent of fish from certain areas of Lake Michigan have toxin-producing *Cl. botulinum* type E in their intestines. Thus, a fish from the Great Lakes has the potential for causing botulism if it is improperly processed and stored and not re-cooked before being eaten.

A study by C. F. Schmidt, *et al.*, (2) showed that spores of *Cl. botulinum* type E have the unique capability of germinating and producing toxin at temperatures as low as 38°F if stored under anaerobic conditions for several weeks. The storage of this homemade gefilte fish in a sealed jar in a home refrigerator for 7 weeks provided adequate conditions for the production of type E toxin.

It is worthy of note that each of these patients had vomiting as a presenting symptom. The extensive report of the type E botulism outbreak in Tennessee related to smoked whitefish (3) revealed that vomiting was one of the commonest symptoms. Thus, type E botulism is different in this respect from the classical forms of the disease.

REFERENCES:

1. Bott, T.L. *et al. Clostridium botulinum* type E in fish from the Great Lakes. J. Bact 91:919-924, March 1966.
2. Schmidt, C.F. *et al.* Growth and toxin production by type E *Clostridium botulinum* below 40°F. J. Food Science 26:626-630, Nov-Dec 1961.
3. Koenig, M.G. *et al.* Clinical and laboratory observations on type E botulism in man. Med. 43:517-545, 1964.

TUBERCULOSIS – Buffalo, New York

On May 4, 1967, a 46-year-old, female, second-grade teacher in a public elementary school in Buffalo was found to have a markedly positive sputum smear for acid-fast bacilli. This study was prompted by a recent abnormal chest x-ray which was interpreted as showing moderately advanced pulmonary tuberculosis. She had been x-rayed on several earlier occasions, most recently in August 1965, because of an extensive family history of tuberculosis. All earlier chest roentgenograms were considered normal. She had had no tuberculin skin tests. The diagnosis of pulmonary tuberculosis was further confirmed when a culture of the sputum grew innumerable colonies of *Mycobacterium tuberculosis* after only 2 weeks of incubation.

Her school attendance record from September 1966 to May 1967 had been flawless.

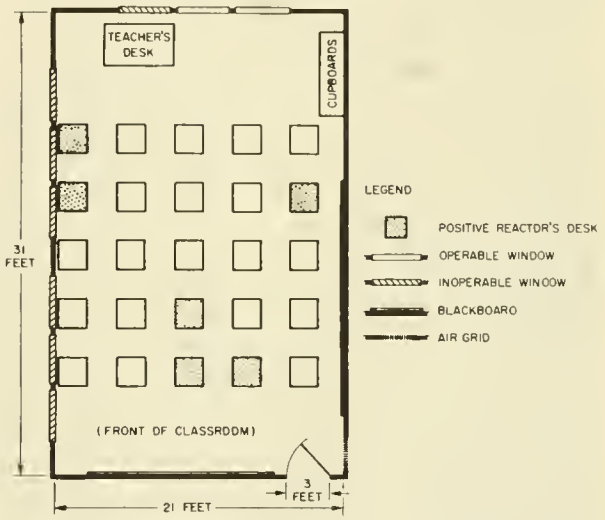
On May 17, Mantoux tests, using intermediate strength PPD, were given to students, teachers, and employees at the school by a team from the Erie County Health Department. Of the 844 students present and tested on May 17, eight reacted positively (9 mm induration or greater). Three of these were among the 25 pupils of the teacher with active tuberculosis. One of the other reactors was a second-grader, and one had been in this teacher's class the previous year. All 25 students in her class had had negative Heaf tests the year before, and all were tested in May 1967. A fourth pupil in the teacher's class was subsequently admitted to a local hospital for an unrelated problem and was found to have converted to a positive tuberculin reaction on repeat testing. In contrast to the normal chest x-rays of her classmates and the other reactors, the x-ray of this patient was abnormal and revealed an enlarged hilar lymph node.

The teacher's son, a student at the school, was not skin tested in the survey. However, a tuberculin skin test, performed by a private physician, was found to be positive. All students with positive tuberculin tests were started on antituberculous chemotherapy. Six of the 36 adults tested had positive reactions. Chest roentgenograms showed no evidence of pulmonary pathology.

In view of the extensive exposure of the class and the initial skin test results, repeat tuberculin testing of the 21 negative pupils in her class was done on June 7, 1967 (5 weeks after contact was broken). Two additional convertors were discovered at this time. Thus, a total of six tuberculin conversions were detected among the 25 students. The distribution of the reactors in the classroom is depicted in Figure 1. Additional skin testing of the class and the rest of the school is planned for the near future.

Figure 1

SEATING OF POSITIVE TUBERCULIN REACTORS IN SECOND-GRADE CLASSROOM, BUFFALO, MAY 1967



Beginning in the fall of 1967, all public and parochial school teachers in the city of Buffalo will be required to have an annual tuberculin test. If positive, periodic chest x-ray examinations will be obtained. These precautions are being instituted in an effort to avert outbreaks such as the one described here.

(Reported by William R. Elsea, M.D., Deputy Commissioner, and A. Arthur Grabau, M.D., Director of the Division of Tuberculosis Control, Erie County (N.Y.) Health Department; and the Tuberculosis Program, NCDC.)

RUBELLA – Floyd County, Georgia

During February 1967, an increase in rash illness was reported from Glenwood School, a suburban elementary school in Floyd County, Georgia. Between mid-January and April, 101 (21.8 percent) of the 464 students developed a rash, which was relatively benign in most instances and caused few prolonged absences from school.

All patients interviewed had a maculopapular rash, predominantly on the face and extremities; 33 percent demonstrated cervical lymphadenopathy and sore throats. Less frequent symptoms included conjunctivitis, pruritis, cough, and coryza.

The first reported case occurred in mid-January, but most students noticed the rash after mid-February. The outbreak appeared in two clusters; in the first, 46.5 percent (47 of 101 cases) developed a rash between February 22 and March 3. The second cluster (31 cases) was reported from March 11 to March 16 (Figure 2).

(Continued on page 200)

CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES

FOR WEEKS ENDED

JUNE 17, 1967 AND JUNE 18, 1966 (24th WEEK)

AREA	ASEPTIC MENINGITIS		BRUCELLOSIS	DIPHTHERIA	ENCEPHALITIS			HEPATITIS			
					Primary including unsp. cases		Post-Infectious	Serum		Infectious	
	1967	1966	1967	1967	1967	1966	1967	1967	1966	1967	1966
UNITED STATES...	45	41	6	1	27	28	21	43	33	742	594
NEW ENGLAND.....	-	1	-	-	-	3	1	2	-	34	15
Maine.....	-	-	-	-	-	-	-	-	-	3	3
New Hampshire.....	-	-	-	-	-	-	-	-	-	-	1
Vermont.....	-	-	-	-	-	-	-	-	-	-	-
Massachusetts.....	-	-	-	-	-	2	1	2	-	13	6
Rhode Island.....	-	1	-	-	-	1	-	-	-	-	3
Connecticut.....	-	-	-	-	-	-	-	-	-	18	2
MIDDLE ATLANTIC.....	8	5	-	-	2	4	1	14	15	146	76
New York City.....	2	2	-	-	-	1	-	7	12	71	22
New York, Up-State.	2	-	-	-	2	-	-	-	1	25	26
New Jersey.....	-	2	-	-	-	1	-	5	2	18	12
Pennsylvania.....	4	1	-	-	-	2	1	2	-	32	16
EAST NORTH CENTRAL...	7	8	-	-	8	7	4	1	1	94	108
Ohio.....	-	-	-	-	7	5	-	1	1	22	17
Indiana.....	2	3	-	-	-	-	-	-	-	7	11
Illinois.....	2	1	-	-	-	2	3	-	-	30	38
Michigan.....	3	4	-	-	1	-	1	-	-	30	39
Wisconsin.....	-	-	-	-	-	-	-	-	-	5	3
WEST NORTH CENTRAL...	1	-	1	-	1	1	4	-	-	31	37
Minnesota.....	1	-	1	-	-	1	4	-	-	4	2
Iowa.....	-	-	-	-	-	-	-	-	-	1	13
Missouri.....	-	-	-	-	1	-	-	-	-	23	21
North Dakota.....	-	-	-	-	-	-	-	-	-	-	-
South Dakota.....	-	-	-	-	-	-	-	-	-	-	-
Nebraska.....	-	-	-	-	-	-	-	-	-	1	-
Kansas.....	-	-	-	-	-	-	-	-	-	2	1
SOUTH ATLANTIC.....	6	3	3	-	-	1	6	2	1	85	73
Delaware.....	1	-	-	-	-	-	-	-	-	5	-
Maryland.....	-	2	-	-	-	-	5	-	-	26	21
Dist. of Columbia..	-	-	-	-	-	-	-	1	-	-	1
Virginia.....	-	-	2	-	-	-	-	-	-	15	12
West Virginia.....	2	-	-	-	-	-	-	-	-	3	4
North Carolina.....	-	-	-	-	-	1	-	-	-	5	6
South Carolina.....	-	-	-	-	-	-	-	-	-	-	2
Georgia.....	-	-	1	-	-	-	-	-	-	8	15
Florida.....	3	1	-	-	-	-	1	1	1	23	12
EAST SOUTH CENTRAL...	1	6	1	-	1	3	-	2	-	50	48
Kentucky.....	-	3	-	-	-	-	-	-	-	25	18
Tennessee.....	-	-	-	-	1	-	-	2	-	12	14
Alabama.....	1	-	-	-	-	1	-	-	-	3	3
Mississippi.....	-	3	1	-	-	2	-	-	-	10	13
WEST SOUTH CENTRAL...	5	8	1	1	5	1	-	1	4	58	42
Arkansas.....	-	-	-	-	-	1	-	-	-	3	3
Louisiana.....	4	1	-	1	2	-	-	1	1	11	11
Oklahoma.....	-	-	-	-	-	-	-	-	-	2	2
Texas.....	1	7	1	-	3	-	-	-	3	42	26
MOUNTAIN.....	-	1	-	-	1	3	-	-	-	73	37
Montana.....	-	-	-	-	-	-	-	-	-	2	1
Idaho.....	-	-	-	-	-	-	-	-	-	1	14
Wyoming.....	-	-	-	-	-	-	-	-	-	2	1
Colorado.....	-	-	-	-	-	1	-	-	-	4	2
New Mexico.....	-	-	-	-	1	-	-	-	-	48	5
Arizona.....	-	1	-	-	-	2	-	-	-	7	8
Utah.....	-	-	-	-	-	-	-	-	-	9	6
Nevada.....	-	-	-	-	-	-	-	-	-	-	-
PACIFIC.....	17	9	-	-	9	5	5	21	12	171	158
Washington.....	-	-	-	-	1	-	-	-	-	14	11
Oregon.....	-	1	-	-	-	-	-	-	-	15	16
California.....	9	8	-	-	7	5	5	21	11	141	121
Alaska.....	-	-	-	-	-	-	-	-	-	-	6
Hawaii.....	8	-	-	-	1	-	-	-	1	1	4
Puerto Rico	-	-	-	-	-	-	-	-	-	19	56

CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES

FOR WEEKS ENDED

JUNE 17, 1967 AND JUNE 18, 1966 (24th WEEK) - CONTINUED

AREA	MALARIA	MEASLES (Rubeola)			MENINGOCOCCAL INFECTIONS, TOTAL			POLIOMYELITIS			RUBELLA
			Cumulative			Cumulative		Total	Paralytic		
	1967	1967	1967	1966	1967	1967	1966	1967	1967	Cum. 1967	1967
UNITED STATES...	41	1,239	53,038	172,735	34	1,346	2,230	-	-	9	1,805
NEW ENGLAND.....	-	10	731	2,051	-	57	103	-	-	-	248
Maine.....	-	2	214	189	-	3	8	-	-	-	36
New Hampshire.....	-	-	71	50	-	2	8	-	-	-	25
Vermont.....	-	-	41	217	-	-	3	-	-	-	34
Massachusetts.....	-	7	269	716	-	29	41	-	-	-	60
Rhode Island.....	-	-	60	72	-	4	12	-	-	-	36
Connecticut.....	-	1	76	807	-	19	31	-	-	-	57
MIDDLE ATLANTIC.....	16	68	1,953	17,252	5	205	256	-	-	2	95
New York City.....	1	21	359	8,045	1	35	36	-	-	1	25
New York, Up-State.	-	13	425	2,198	3	50	74	-	-	-	70
New Jersey.....	5	18	456	1,803	-	78	71	-	-	-	-
Pennsylvania.....	10	16	713	5,206	1	42	75	-	-	1	-
EAST NORTH CENTRAL...	-	198	4,690	63,007	7	169	350	-	-	-	418
Ohio.....	-	111	1,042	6,011	3	62	97	-	-	-	43
Indiana.....	-	5	538	5,140	1	22	60	-	-	-	-
Illinois.....	-	14	817	10,953	3	40	65	-	-	-	137
Michigan.....	-	19	833	12,014	-	34	94	-	-	-	114
Wisconsin.....	-	49	1,460	28,889	-	11	34	-	-	-	124
WEST NORTH CENTRAL...	3	142	2,647	8,176	2	62	124	-	-	-	21
Minnesota.....	-	1	111	1,606	1	15	30	-	-	-	8
Iowa.....	-	10	723	5,000	-	12	16	-	-	-	6
Missouri.....	1	83	298	503	-	12	50	-	-	-	1
North Dakota.....	-	2	780	954	-	-	7	-	-	-	5
South Dakota.....	-	-	47	38	-	6	4	-	-	-	-
Nebraska.....	-	16	596	75	1	11	8	-	-	-	1
Kansas.....	2	30	92	NN	-	6	9	-	-	-	-
SOUTH ATLANTIC.....	3	175	6,214	13,469	7	258	369	-	-	1	92
Delaware.....	-	1	37	233	-	5	4	-	-	-	12
Maryland.....	1	2	119	1,979	2	31	34	-	-	1	11
Dist. of Columbia..	-	1	20	369	-	9	9	-	-	-	-
Virginia.....	1	45	1,890	1,732	2	27	48	-	-	-	19
West Virginia.....	-	44	1,280	4,658	-	19	12	-	-	-	22
North Carolina.....	-	2	825	321	-	50	92	-	-	-	-
South Carolina.....	-	33	478	605	1	24	43	-	-	-	1
Georgia.....	1	3	29	228	-	43	55	-	-	-	-
Florida.....	-	44	1,536	3,344	2	50	72	-	-	-	27
EAST SOUTH CENTRAL...	-	71	4,764	18,291	2	115	193	-	-	1	194
Kentucky.....	-	25	1,194	4,509	1	33	74	-	-	-	171
Tennessee.....	-	34	1,649	11,313	-	47	61	-	-	-	22
Alabama.....	-	10	1,277	1,559	1	23	42	-	-	-	1
Mississippi.....	-	2	644	910	-	12	16	-	-	1	-
WEST SOUTH CENTRAL...	-	193	16,434	21,827	5	194	321	-	-	5	10
Arkansas.....	-	11	1,399	954	-	24	23	-	-	-	-
Louisiana.....	-	2	143	85	3	77	122	-	-	-	-
Oklahoma.....	-	3	3,306	450	1	13	17	-	-	1	-
Texas.....	-	177	11,586	20,338	1	80	159	-	-	4	10
MOUNTAIN.....	3	111	4,051	10,594	-	25	71	-	-	-	173
Montana.....	-	10	262	1,661	-	-	4	-	-	-	7
Idaho.....	-	9	356	1,279	-	1	5	-	-	-	6
Wyoming.....	-	4	68	129	-	1	4	-	-	-	-
Colorado.....	3	64	1,338	1,085	-	10	37	-	-	-	116
New Mexico.....	-	2	541	1,042	-	3	9	-	-	-	-
Arizona.....	-	16	900	4,965	-	4	8	-	-	-	44
Utah.....	-	6	317	397	-	4	-	-	-	-	-
Nevada.....	-	-	269	36	-	2	4	-	-	-	-
PACIFIC.....	16	271	11,554	18,068	6	261	443	-	-	-	554
Washington.....	4	56	5,331	3,278	-	24	35	-	-	-	35
Oregon.....	-	24	1,460	1,264	-	24	29	-	-	-	31
California.....	9	184	4,523	13,259	6	203	361	-	-	-	473
Alaska.....	-	2	124	165	-	8	15	-	-	-	5
Hawaii.....	3	5	116	102	-	2	3	-	-	-	10
Puerto Rico.....	-	35	1,867	2,137	1	9	8	-	-	-	1

CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES
FOR WEEKS ENDED
JUNE 17, 1967 AND JUNE 18, 1966 (24th WEEK) - CONTINUED

AREA	STREPTOCOCCAL SORE THROAT & SCARLET FEVER	TETANUS		TULAREMIA		TYPHOID		TYPHUS FEVER TICK-BORNE (Rky. Mt. Spotted)		RABIES IN ANIMALS	
	1967	1967	Cum. 1967	1967	Cum. 1967	1967	Cum. 1967	1967	Cum. 1967	1967	Cum. 1967
UNITED STATES...	6,295	8	80	3	65	4	176	10	66	97	2,154
NEW ENGLAND.....	867	-	-	-	-	-	2	-	-	3	50
Maine.....	46	-	-	-	-	-	-	-	-	1	13
New Hampshire.....	3	-	-	-	-	-	-	-	-	1	28
Vermont.....	-	-	-	-	-	-	-	-	-	-	7
Massachusetts.....	131	-	-	-	-	-	2	-	-	-	1
Rhode Island.....	96	-	-	-	-	-	-	-	-	1	1
Connecticut.....	591	-	-	-	-	-	-	-	-	-	-
MIDDLE ATLANTIC.....	430	-	7	-	-	-	16	4	7	1	40
New York City.....	26	-	3	-	-	-	9	-	-	-	-
New York, Up-State.	383	-	1	-	-	-	5	-	1	1	31
New Jersey.....	NN	-	1	-	-	-	1	2	2	-	-
Pennsylvania.....	21	-	2	-	-	-	1	2	4	-	9
EAST NORTH CENTRAL...	564	3	10	-	8	-	11	-	5	6	202
Ohio.....	113	1	1	-	-	-	4	-	4	-	80
Indiana.....	32	1	2	-	1	-	1	-	1	3	35
Illinois.....	145	-	5	-	7	-	1	-	-	3	43
Michigan.....	209	1	2	-	-	-	4	-	-	-	18
Wisconsin.....	65	-	-	-	-	-	1	-	-	-	26
WEST NORTH CENTRAL...	222	-	4	1	12	1	5	1	1	22	484
Minnesota.....	2	-	2	-	-	-	1	-	-	3	93
Iowa.....	69	-	-	-	1	-	2	-	-	3	58
Missouri.....	38	-	2	-	3	-	-	1	1	4	97
North Dakota.....	56	-	-	-	-	-	-	-	-	8	81
South Dakota.....	9	-	-	-	1	-	-	-	-	3	68
Nebraska.....	36	-	-	-	-	-	1	-	-	-	32
Kansas.....	12	-	-	1	7	1	1	-	-	1	55
SOUTH ATLANTIC.....	676	2	19	-	7	-	17	3	24	13	283
Delaware.....	21	-	-	-	-	-	-	-	-	-	-
Maryland.....	114	-	-	-	-	-	2	2	2	-	-
Dist. of Columbia..	7	-	-	-	-	-	1	-	-	-	-
Virginia.....	274	-	4	-	-	-	2	-	7	5	143
West Virginia.....	88	-	-	-	1	-	1	-	-	2	48
North Carolina.....	22	-	5	-	-	-	2	1	12	-	3
South Carolina.....	2	-	1	-	2	-	3	-	2	-	-
Georgia.....	3	-	3	-	3	-	2	-	1	6	59
Florida.....	145	2	6	-	1	-	4	-	-	-	30
EAST SOUTH CENTRAL...	787	1	17	-	7	1	26	1	11	12	458
Kentucky.....	62	-	-	-	1	-	13	-	4	5	96
Tennessee.....	531	-	8	-	4	-	5	-	4	6	327
Alabama.....	88	1	7	-	-	-	5	1	3	1	33
Mississippi.....	106	-	2	-	2	1	3	-	-	-	2
WEST SOUTH CENTRAL...	648	1	14	2	21	1	20	-	6	25	448
Arkansas.....	-	-	4	1	8	-	5	-	1	1	64
Louisiana.....	1	1	3	-	2	-	11	-	-	1	37
Oklahoma.....	40	-	-	1	8	-	-	-	3	10	134
Texas.....	607	-	7	-	3	1	4	-	2	13	213
MOUNTAIN.....	1,305	-	-	-	7	-	15	-	6	7	70
Montana.....	32	-	-	-	1	-	1	-	-	-	-
Idaho.....	126	-	-	-	-	-	-	-	-	-	-
Wyoming.....	3	-	-	-	2	-	-	-	-	-	4
Colorado.....	780	-	-	-	1	-	11	-	6	-	8
New Mexico.....	154	-	-	-	-	-	-	-	-	3	21
Arizona.....	43	-	-	-	-	-	3	-	-	3	36
Utah.....	166	-	-	-	3	-	-	-	-	-	-
Nevada.....	1	-	-	-	-	-	-	-	-	1	1
PACIFIC.....	796	1	9	-	3	1	64	1	6	8	119
Washington.....	113	-	-	-	2	-	-	-	1	-	-
Oregon.....	58	1	1	-	-	-	-	-	-	-	1
California.....	564	-	6	-	1	1	61	1	5	8	118
Alaska.....	51	-	-	-	-	-	-	-	-	-	-
Hawaii.....	10	-	2	-	-	-	3	-	-	-	-
Puerto Rico.....	3	1	6	-	-	-	4	-	-	1	20

Week No. 24

DEATHS IN 122 UNITED STATES CITIES FOR WEEK ENDED JUNE 17, 1967

(By place of occurrence and week of filing certificate. Excludes fetal deaths)

Area	All Causes		Pneumonia and Influenza	Under 1 year
	All Ages	65 years and over	All Ages	All Causes
NEW ENGLAND:	697	439	35	22
Boston, Mass.	205	121	9	13
Bridgeport, Conn.	37	26	2	-
Cambridge, Mass.	24	13	-	1
Fall River, Mass.	34	20	2	2
Hartford, Conn.	60	26	-	2
Lowell, Mass.	31	21	3	-
Lynn, Mass.	28	17	1	-
New Bedford, Mass.	27	19	-	1
New Haven, Conn.	50	37	2	-
Providence, R. I.	68	43	5	2
Somerville, Mass.	16	11	2	-
Springfield, Mass.	45	36	6	-
Waterbury, Conn.	18	12	-	-
Worcester, Mass.	54	37	3	1
MIDDLE ATLANTIC:	3,281	1,944	121	126
Albany, N. Y.	46	29	1	2
Allentown, Pa.	27	21	-	1
Buffalo, N. Y.	163	93	3	12
Camden, N. J.	41	23	5	3
Elizabeth, N. J.	30	19	1	1
Erie, Pa.	36	22	4	-
Jersey City, N. J.	78	47	4	4
Newark, N. J.	102	57	5	5
New York City, N. Y.	1,635	944	47	60
Paterson, N. J.	38	23	1	3
Philadelphia, Pa.	494	290	22	14
Pittsburgh, Pa.	176	103	4	5
Reading, Pa.	39	27	2	2
Rochester, N. Y.	107	68	7	7
Schenectady, N. Y.	37	27	1	1
Scranton, Pa.	42	29	1	-
Syracuse, N. Y.	75	42	-	4
Trenton, N. J.	44	26	3	2
Utica, N. Y.	38	28	7	-
Yonkers, N. Y.	33	26	3	-
EAST NORTH CENTRAL:	2,606	1,440	69	138
Akron, Ohio	72	39	-	2
Canton, Ohio	42	25	1	4
Chicago, Ill.	783	400	22	42
Cincinnati, Ohio	157	96	-	6
Cleveland, Ohio	213	111	1	15
Columbus, Ohio	112	63	3	11
Dayton, Ohio	85	49	1	6
Detroit, Mich.	352	208	13	16
Evansville, Ind.	47	27	4	1
Flint, Mich.	56	23	1	6
Fort Wayne, Ind.	56	32	2	4
Gary, Ind.	23	7	4	4
Grand Rapids, Mich.	46	31	1	2
Indianapolis, Ind.	123	62	1	8
Madison, Wis.	40	26	1	-
Milwaukee, Wis.	133	88	4	3
Peoria, Ill.	20	12	-	-
Rockford, Ill.	29	17	5	-
South Bend, Ind.	42	23	-	-
Toledo, Ohio	114	64	3	3
Youngstown, Ohio	61	37	2	3
WEST NORTH CENTRAL:	795	479	15	47
Des Moines, Iowa	50	33	1	5
Duluth, Minn.	18	15	-	-
Kansas City, Kans.	27	12	1	5
Kansas City, Mo.	119	70	3	7
Lincoln, Nebr.	32	24	-	3
Minneapolis, Minn.	120	69	4	6
Omaha, Nebr.	79	47	-	4
St. Louis, Mo.	221	130	4	13
St. Paul, Minn.	72	43	2	2
Wichita, Kans.	57	36	-	2

Area	All Causes		Pneumonia and Influenza	Under 1 year
	All Ages	65 years and over	All Ages	All Causes
SOUTH ATLANTIC:	1,082	553	24	54
Atlanta, Ga.	121	63	5	7
Baltimore, Md.	245	122	2	18
Charlotte, N. C.	29	9	-	1
Jacksonville, Fla.	69	35	2	2
Miami, Fla.	81	41	-	6
Norfolk, Va.	48	31	3	1
Richmond, Va.	75	33	-	6
Savannah, Ga.	38	17	1	1
St. Petersburg, Fla.	68	53	3	2
Tampa, Fla.	65	34	3	-
Washington, D. C.	202	93	4	5
Wilmington, Del.	41	22	1	5
EAST SOUTH CENTRAL:	647	331	24	45
Birmingham, Ala.	94	44	3	4
Chattanooga, Tenn.	47	23	1	4
Knoxville, Tenn.	47	32	2	-
Louisville, Ky.	109	53	6	10
Memphis, Tenn.	141	73	3	14
Mobile, Ala.	41	16	2	4
Montgomery, Ala.	49	27	3	3
Nashville, Tenn.	119	63	4	6
WEST SOUTH CENTRAL:	1,138	559	37	89
Austin, Tex.	37	18	6	3
Baton Rouge, La.	49	27	1	11
Corpus Christi, Tex.	39	17	-	4
Dallas, Tex.	151	66	6	9
El Paso, Tex.	41	18	1	2
Fort Worth, Tex.	81	37	2	2
Houston, Tex.	249	106	3	25
Little Rock, Ark.	54	27	1	2
New Orleans, La.	171	85	5	13
Oklahoma City, Okla.	90	58	4	8
San Antonio, Tex.	86	45	-	6
Shreveport, La.	39	24	4	3
Tulsa, Okla.	51	31	4	1
MOUNTAIN:	411	242	26	22
Albuquerque, N. Mex.	40	21	3	2
Colorado Springs, Colo.	20	11	3	1
Denver, Colo.	101	62	4	8
Ogden, Utah	25	12	-	4
Phoenix, Ariz.	98	61	8	2
Pueblo, Colo.	22	11	2	-
Salt Lake City, Utah	46	31	5	4
Tucson, Ariz.	59	33	1	1
PACIFIC:	1,547	958	35	74
Berkeley, Calif.	21	14	1	1
Fresno, Calif.	49	21	-	3
Glendale, Calif.	42	32	-	1
Honolulu, Hawaii	33	17	-	4
Long Beach, Calif.	62	49	1	2
Los Angeles, Calif.	482	317	9	24
Oakland, Calif.	94	55	3	6
Pasadena, Calif.	31	28	-	2
Portland, Oreg.	115	73	2	5
Sacramento, Calif.	57	27	1	3
San Diego, Calif.	88	52	1	2
San Francisco, Calif.	179	93	1	6
San Jose, Calif.	32	20	2	1
Seattle, Wash.	156	91	7	6
Spokane, Wash.	61	41	1	5
Tacoma, Wash.	45	28	6	3
Total	12,204	6,945	386	617

Cumulative Totals
including reported corrections for previous weeks

All Causes, All Ages	305,018
All Causes, Age 65 and over	175,825
Pneumonia and Influenza, All Ages	11,595
All Causes, Under 1 Year of Age	15,278

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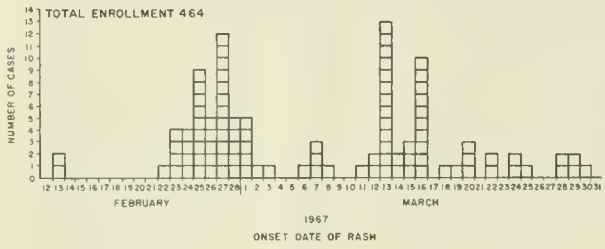
RUBELLA – Floyd County, Georgia

(Continued from page 195)

Figure 2
CASES OF RASH ILLNESS, FEBRUARY – MARCH 1967*
GLENWOOD SCHOOL, FLOYD COUNTY, GEORGIA



* 1 CASE WITH ONSET 1/20/67

Attack rates were highest in grades one, two, three, and eight. The first grade had the largest number of cases and the highest percent ill, with 46 of 84 children (54.8 percent) developing a rash. No sex difference in the occurrence of the rash illness was distinguishable.

Four paired sera from Glenwood cases showed a diagnostic rise (fourfold increase) in HI antibody for rubella. Three of these patients were in the first grade. Preliminary data indicate that rubella virus was cultured from three of six Glenwood patients from whom throat swabs were collected; included is a case with a diagnostic fourfold rise in rubella antibody titer. Five other serologically confirmed cases were found in nearby schools. *(Reported by George Perkins, M.D., District Director of Public Health, John E. McCroan, Ph.D., Director, Epidemiologic Investigations Section, and Thomas McKinley, Epidemiologist, Georgia Department of Public Health; and a team from NCDC.)*

THE MORBIDITY AND MORTALITY WEEKLY REPORT, WITH A CIRCULATION OF 17,000, IS PUBLISHED AT THE NATIONAL COMMUNICABLE DISEASE CENTER, ATLANTA, GEORGIA.

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IN ADDITION TO THE ESTABLISHED PROCEDURES FOR REPORTING MORBIDITY AND MORTALITY, THE NATIONAL COMMUNICABLE DISEASE CENTER WELCOMES ACCOUNTS OF INTERESTING OUTBREAKS OR CASE INVESTIGATIONS WHICH ARE OF CURRENT INTEREST TO HEALTH OFFICIALS AND WHICH ARE DIRECTLY RELATED TO THE CONTROL OF COMMUNICABLE DISEASES. SUCH COMMUNICATIONS SHOULD BE ADDRESSED TO:

THE EDITOR
MORBIDITY AND MORTALITY WEEKLY REPORT
NATIONAL COMMUNICABLE DISEASE CENTER
ATLANTA, GEORGIA 30333

NOTE: THE DATA IN THIS REPORT ARE PROVISIONAL AND ARE BASED ON WEEKLY TELEGRAMS TO THE NCDC BY THE INDIVIDUAL STATE HEALTH DEPARTMENTS. THE REPORTING WEEK CONCLUDES ON SATURDAY; COMPILED DATA ON A NATIONAL BASIS ARE RELEASED ON THE SUCCEEDING FRIDAY.

U.S. DEPARTMENT OF
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